

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A thermoplastic composition, comprising:

a poly(arylene ether);

a poly(alkenyl aromatic) resin in an amount of at least about 10 weight percent of the total of the poly(arylene ether) and the poly(alkenyl aromatic) resin;

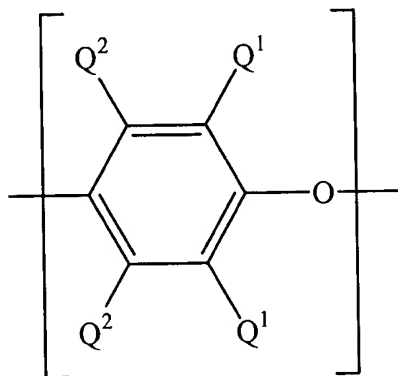
a polyolefin;

ad
cm
a hydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene, wherein the hydrogenated block copolymer has an alkenyl aromatic content of about 40 to about 90 weight percent;

a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof; and

a reinforcing filler.

Claim 2 (Original): The thermoplastic composition of Claim 1, wherein the poly(arylene ether) comprises a plurality of structural units of the formula



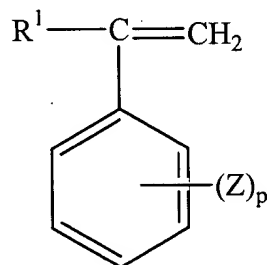
wherein for each structural unit, each Q^1 is independently halogen, primary or secondary C_1 - C_8 alkyl, phenyl, C_1 - C_8 haloalkyl, C_1 - C_8 aminoalkyl, C_1 - C_8 hydrocarboxy, or C_2 - C_8 halohydrocarboxy wherein at least two carbon atoms separate the halogen and oxygen atoms; and each Q^2 is independently hydrogen, halogen, primary or secondary C_1 - C_8 alkyl, phenyl, C_1 - C_8 haloalkyl, C_1 - C_8 aminoalkyl, C_1 - C_8 hydrocarboxy, or C_2 - C_8 halohydrocarboxy wherein at least two carbon atoms separate the halogen and oxygen atoms.

Claim 3 (Original): The thermoplastic composition of Claim 2, wherein each Q^1 is independently C_1 - C_4 alkyl or phenyl, and each Q^2 is independently hydrogen or methyl.

Claim 4 (Original): The thermoplastic composition of Claim 1, wherein the poly(arylene ether) is a copolymer of 2,6-dimethylphenol and 2,3,6-trimethylphenol.

Claim 5 (Original): The thermoplastic composition of Claim 1, wherein the poly(arylene ether) is present at about 10 weight percent to about 55 weight percent, based on the total weight of the composition.

Claim 6 (Original): The thermoplastic composition of Claim 1, wherein the poly(alkenyl aromatic) resin comprises at least 25% by weight of structural units derived from an alkenyl aromatic monomer of the formula



wherein R^1 is hydrogen, $\text{C}_1\text{-C}_8$ alkyl, or halogen; Z is vinyl, halogen, or $\text{C}_1\text{-C}_8$ alkyl; and p is 0 to 5.

Claim 7 (Original): The thermoplastic composition of Claim 6, wherein the poly(alkenyl aromatic) resin comprises at least one poly(alkenyl aromatic) resin selected from the group consisting of atactic homopolystyrene, syndiotactic homopolystyrene, rubber-modified polystyrene, and mixtures comprising at least one of the foregoing poly(alkenyl aromatic) resins.

Claim 8 (Original): The thermoplastic composition of Claim 1, wherein the poly(alkenyl aromatic) resin is present at about 1 weight percent to about 50 weight percent, based on the total weight of the composition.

Claim 9 (Original): The thermoplastic composition of Claim 1, wherein the polyolefin comprises a homopolymer or copolymer having at least about 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof.

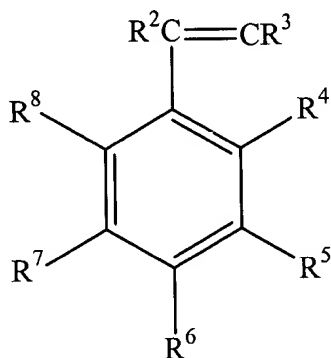
Claim 10 (Original): The thermoplastic composition of Claim 1, wherein the polyolefin is a propylene polymer; wherein the propylene polymer is a homopolymer of polypropylene, or a random, graft, or block copolymer of propylene and at least one olefin selected from ethylene and $\text{C}_4\text{-C}_{10}$ alpha-olefins, with the proviso that the copolymer comprises at least about 80 weight percent of repeating units derived from propylene.

Claim 11 (Original): The thermoplastic composition of Claim 1, wherein the polyolefin comprises a homopolypropylene.

Claim 12 (Original): The thermoplastic composition of Claim 1, wherein the polyolefin is present at about 10 weight percent to about 60 weight percent, based on the total weight of the composition.

Claim 13 (Currently Amended): The thermoplastic composition of Claim 1, wherein the hydrogenated block copolymer comprises:

(A) at least one block derived from an alkenyl aromatic compound having the formula



wherein R² and R³ each represent a hydrogen atom, a C₁-C₈ alkyl group, or a C₂-C₈ alkenyl group; R⁴ and R⁸ each represent a hydrogen atom, a C₁-C₈ alkyl group, a chlorine atom, or a bromine atom; and R⁵-R⁷ each independently represent a hydrogen atom, a C₁-C₈ alkyl group, or a C₂-C₈ alkenyl group, or R⁴ and R⁵ are taken together with the central aromatic ring to form a naphthyl group, or R⁵ and R⁶ are taken together with the central aromatic ring to form a naphthyl group including; and

(B) at least one block derived from a conjugated diene, in which the aliphatic unsaturated group content in the block (B) is reduced by hydrogenation.

Claim 14 (Original): The thermoplastic composition of Claim 1, wherein the hydrogenated block copolymer comprises a styrene-(ethylene-butylene)-styrene triblock copolymer.

Claim 15 (Original): The thermoplastic composition of Claim 1, wherein the hydrogenated block copolymer has a styrene content of about 50 to about 85 weight percent.

Claim 16 (Original): The thermoplastic composition of Claim 1, wherein the hydrogenated block copolymer has a styrene content of about 55 to about 70 weight percent.

Claim 17 (Original): The thermoplastic composition of Claim 1, wherein the hydrogenated block copolymer is present at about 1 weight percent to about 20 weight percent, based on the total weight of the composition.

Claim 18 (Original): The thermoplastic composition of Claim 1, wherein the a polyolefin-graft-cyclic anhydride copolymer is a polypropylene-graft-maleic anhydride copolymer.

ad
cn
Claim 19 (Original): The thermoplastic composition of Claim 1, wherein the a polyolefin-graft-cyclic anhydride copolymer is present at about 0.1 to about 10 weight percent, based on the total weight of the composition.

Claim 20 (Original): The thermoplastic composition of Claim 1, wherein the reinforcing filler is selected from the group consisting of glass fibers, talc, quartz fibers, carbon fibers, potassium titanate fibers, silicon carbide fibers, boron carbide fibers, gypsum fibers, aluminum oxide fibers, iron fibers, nickel fibers, copper fibers, wollastonite fibers, poly(ether ketone) fibers, polyimide benzoxazole fibers, poly(phenylene sulfide) fibers, polyester fibers, aromatic polyamide fibers, aromatic polyimide fibers, aromatic polyetherimide fibers, acrylic fibers, poly(vinyl alcohol) fibers, polytetrafluoroethylene fibers, and combinations comprising at least one of the foregoing reinforcing fillers.

Claim 21 (Original): The thermoplastic composition of Claim 1, wherein the reinforcing filler comprises glass fibers having a diameter of about 2 to about 25 micrometers.

Claim 22 (Original): The thermoplastic composition of Claim 1, wherein the reinforcing filler comprises talc.

Claim 23 (Original): The thermoplastic composition of Claim 1, wherein the reinforcing filler comprises vapor-grown carbon fibers having an average diameter of about 3 to about 500 nanometers.

Claim 24 (Original): The thermoplastic composition of Claim 1, wherein the reinforcing filler comprises a surface coating in an amount effective to increase compatibility with the polyolefin.

Claim 25 (Original): The thermoplastic composition of Claim 1, wherein the reinforcing filler is present at about 1 weight percent to about 50 weight percent, based on the total weight of the composition.

Claim 26 (Original): The thermoplastic composition of Claim 1, further comprising an unhydrogenated block copolymer of alkenyl aromatic compound and a conjugated diene.

ad
ent
Claim 27 (Original): The thermoplastic composition of Claim 26, wherein the unhydrogenated block copolymer comprises a styrene-butadiene diblock copolymer or a styrene-butadiene-styrene triblock copolymer.

Claim 28 (Original): The thermoplastic composition of Claim 26, wherein the unhydrogenated block copolymer of alkenyl aromatic compound and a conjugated diene is present at about 0.5 weight percent to about 20 weight percent, based on the total weight of the composition.


Claim 29 (Original): The thermoplastic composition of Claim 1, further comprising a polypropylene-polystyrene graft copolymer.

Claim 30 (Original): The thermoplastic composition of Claim 29, wherein the polypropylene-polystyrene graft copolymer comprises a graft copolymer having a propylene polymer backbone and one or more styrene polymer grafts.

Claim 31 (Original): The thermoplastic composition of Claim 29, wherein the polypropylene-polystyrene graft copolymer comprises about 10 to about 90 weight percent propylene polymer backbone and about 90 to about 10 weight percent styrene polymer grafts.

Claim 32 (Original): The thermoplastic composition of Claim 29, wherein the polypropylene-polystyrene graft copolymer is present at about 0.5 weight percent to about 20 weight percent, based on the total weight of the composition.

Claim 33 (Currently Amended): The thermoplastic composition of Claim 1, wherein the polyolefin is homopolypropylene, and wherein the composition further comprising comprises an ethylene/alpha-olefin elastomeric copolymer at about 0.5 weight percent to about 25 weight percent, based on the total weight of the composition.

 Claim 34 (Original): The thermoplastic composition of Claim 33, wherein the ethylene/alpha-olefin elastomeric copolymer comprises a copolymer of ethylene and at least one C₃-C₁₀ alpha-olefin.

Claim 35 (Original): The thermoplastic composition of Claim 33, wherein the ethylene/alpha-olefin elastomeric copolymer comprises an ethylene-butylene rubber, an ethylene-propylene rubber, or a mixture thereof.

Claim 36 (Original): The thermoplastic composition of Claim 1, further comprising a hydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene, wherein the hydrogenated block copolymer has an alkenyl aromatic content of about 10 to less than 40 weight percent.

Claim 37 (Original): The thermoplastic composition of Claim 1, further comprising an additive selected from the group consisting of stabilizers, mold release agents, processing aids, flame retardants, drip retardants, nucleating agents, UV blockers, dyes, pigments, particulate fillers, antioxidants, anti-static agents, blowing agents, and combinations comprising at least one of the foregoing additives.

Claim 38 (Original): The thermoplastic composition of Claim 1, wherein the composition after molding exhibits a flexural modulus at 23°C according to ASTM D790 greater than about 300 kpsi.

Claim 39 (Original): The thermoplastic composition of Claim 1, wherein the composition after molding exhibits a sample-to-sample variability in Flexural Modulus at 23°C of less than about 10 percent.

Claim 40 (Currently Amended): A thermoplastic composition, comprising:

a poly(arylene ether);

a poly(alkenyl aromatic) resin;

a polyolefin;

a hydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene, wherein the hydrogenated block copolymer has an alkenyl aromatic content of about 40 to about 90 weight percent;

a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof;

a polypropylene-polystyrene graft copolymer or an unhydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene; and

a reinforcing filler.

Claim 41 (Currently Amended): A thermoplastic composition, comprising:

about 10 to about 55 weight percent of a poly(arylene ether);

about 1 to about 50 weight percent of a poly(alkenyl aromatic) resin; wherein the amount of poly(alkenyl aromatic) resin is at least about 10 weight percent of the total of the poly(arylene ether) and the poly(alkenyl aromatic) resin;

about 10 to about 60 weight percent of a polyolefin;

about 1 to about 20 weight percent of a hydrogenated block copolymer of alkenyl aromatic compound and a conjugated diene having an alkenyl aromatic content of about 40 to about 90 weight percent;

about 0.1 to about 10 weight percent of a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof; and

about 1 to about 50 weight percent of a reinforcing filler;

wherein all weight percents are based on the total weight of the composition.

ad
cm

Claim 42 (Currently Amended): A thermoplastic composition, comprising:

about 10 to about 55 weight percent of a poly(arylene ether);

about 1 to about 50 weight percent of a poly(alkenyl aromatic) resin;

about 10 to about 60 weight percent of a polyolefin;

about 1 to about 20 weight percent of a hydrogenated block copolymer of alkenyl aromatic compound and a conjugated diene having an alkenyl aromatic content of about 40 to about 90 weight percent;

about 0.5 to about 20 weight percent of a polypropylene-polystyrene graft copolymer or an unhydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene; ~~and~~

about 0.1 to about 10 weight percent of a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof; and

about 1 to about 50 weight percent of a reinforcing filler;

wherein all weight percents are based on the total weight of the composition.

all
(m)


Claim 43 (Currently Amended): A thermoplastic composition, comprising:

about 10 to about 55 weight percent of a poly(arylene ether);

about 1 to about 50 weight percent of a poly(alkenyl aromatic) resin;

about 10 to about 60 weight percent of a polyolefin;

about 1 to about 20 weight percent of a hydrogenated block copolymer of alkenyl aromatic compound and a conjugated diene having an alkenyl aromatic content of about 40 to about 90 weight percent;

 about 0.1 to about 10 weight percent of a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof;

about 1 to about 50 weight percent of a reinforcing filler;

about 0.5 to about 20 weight percent of a polypropylene-polystyrene graft copolymer or an unhydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene; and

about 0.5 to about 25 weight percent of an ethylene/alpha-olefin elastomeric copolymer;

wherein all weight percents are based on the total weight of the composition.

Claim 44 (Currently Amended): A thermoplastic composition, comprising the reaction product of:

a poly(arylene ether);

a poly(alkenyl aromatic) resin in an amount of at least about 10 weight percent of the total of the poly(arylene ether) and the poly(alkenyl aromatic) resin;

a polyolefin;

a hydrogenated block copolymer of an alkenyl aromatic compound and a conjugated diene, wherein the hydrogenated block copolymer has an alkenyl aromatic content of about 40 to about 90 weight percent;

a polyolefin-graft-cyclic anhydride copolymer a polyolefin-graft-cyclic anhydride copolymer consisting of a polyolefin backbone and polar grafts formed from polymerization of one or more cyclic anhydrides, wherein the polyolefin backbone comprises at least 80 weight percent of units derived from polymerization of ethylene, propylene, butylene, or a mixture thereof; and

a reinforcing filler.

Claim 45 (Original): An article comprising the composition of Claim 44.

Claim 46 (Original): An article comprising the composition of Claim 44, wherein the article is formed using at least one method selected from the group consisting of injection molding, blow molding, extrusion, sheet extrusion, film extrusion, profile extrusion, pultrusion, compression molding, thermoforming, pressure forming, hydroforming, and vacuum forming.

Claim 47 (Original): A sheet comprising the composition of Claim 44.